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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,478	07/24/2003	Kazuhito Shimoda	S1459.70054US00	1282
7590	06/29/2005		EXAMINER	
Randy J. Pritzker Wolf, Greenfield & Sacks, P.C. 600 Atlantic Avenue Boston, MA 02210			CRUZ, MAGDA	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EV

<b>Office Action Summary</b>	Application No. 10/626,478	Applicant(s) SHIMODA, KAZUHITO	
	Examiner Magda Cruz	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.  
 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-23 and 25-44 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1,3-23 and 25-44 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. Claims 1, 8-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsako et al. in view of Takahashi et al.

Ohsako et al. (US 2004/0061935 A1) discloses:

- Regarding claims 1 and 14, a projection screen (10) and the method for manufacturing said projection screen (page 4, paragraphs 0054 and 0055), comprising a substrate (11); a light selective reflection layer (12) which is formed on one side of the substrate (11), which has the reflection characteristics in relation to lights in specific wavelength bands, and which has the absorption characteristics in relation to lights other than the lights in the specific wavelength bands (page 1, paragraph 0013, lines 8-11).
- Regarding claim 8 (and claim 30), the substrate (11) is made of polymeric materials (page 2, paragraph 0033, lines 5).
- Regarding claim 9 (and claim 31), the polymeric materials are chosen from a group consisting of polycarbonate, polyethylene terephthalate, polyethylene naphthalate, polyether sulfone, and polyolefin (page 2, paragraph 0033, lines 3-5).
- Regarding claim 10 (and claim 32), a light diffusion layer (13) is provided on the light selective reflection layer (12) on a side opposite to the substrate (11).

- Regarding claim 11 (and claim 33), a light diffusion part (13), having a plurality of convex parts (12A, 11A) or a plurality of concave parts is provided on the surface where the light selective reflection layer (12) is formed on the substrate (11).
- Regarding claim 12 (and claim 34), the specific wavelength bands include each wavelength band of red light, green light, and blue light (page 3, paragraph 0035, lines 6-13).

Ohsako et al. teaches the salient features of the present invention as explained above, except a light selective reflection layer having reflection of 70% or more in relation to the lights in the specific wavelength bands, and has absorptance of 80% or more in relation to the lights other than the lights in the specific wavelength bands. However, Ohsako et al. discloses that a predetermined percentage of the light in the specific wavelength band is reflected (page 1, paragraph 0014, lines 8-10).

Takahashi et al. (US 2005/0078366 A1) discloses a light selective reflection layer having reflection of 70% or more in relation to the lights in the specific wavelength bands (page 1, paragraph 0009, line 4), and has absorptance of 80% or more in relation to the lights other than the lights in the specific wavelength bands (Page 8, Table 2, shows a transmittance of 13% for the example film layer 6. If the transmittance is of 13%, then the amount of light absorb is approximately 87%).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the light selective reflection layer disclosed Takahashi et al. in substitution of the light selective reflection layer from Ohsako et al.'s invention, for

the purpose of having good image visibility and sharp images with no halation (Takahashi et al., page 9, paragraph 0143, lines 1-3).

2. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsako et al. in view of Takahashi et al. as applied to claims 1, 8-12 and 14 above, and further in view of Sinkoff.

Ohsako et al. (US 2004/0061935 A1) in combination with Takahashi et al. (US 2005/0078366 A1) teaches the salient features of the present invention, as explained above (see Rejection under §103(a)), except (regarding claim 4) an optical multilayer film made by alternately layering metal films, wherein the metal films are made of Nb, Al, or Ag. However, Ohsako et al. discloses (regarding claim 3) an optical multilayer film (12) made by alternately layering films (12H, 12L...) and dielectric films (page 2, paragraph 0034, lines 1-6), wherein (regarding claim 5) the dielectric films are made of Nb<sub>2</sub>O<sub>5</sub>, TiO<sub>2</sub>, Ta<sub>2</sub>O<sub>5</sub>, Al<sub>2</sub>O<sub>3</sub>, or SiO<sub>2</sub> (page 2, paragraph 0034, lines 7-12).

Sinkoff (US Patent Number 6,724,529 B2) discloses an optical multilayer film (30) made by a metal film (20), wherein the metal film is made of Nb, Al, or Ag (column 4, lines 32-34).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the metal film disclosed by Sinkoff in combination with Ohsako et al.'s optical multilayer film, for the purpose of having a projection screen with excellent reflection directivity which produce a reflected image having a superior gain contrast (Sinkoff, page 1, lines 10-12).

3. Claims 13 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsako et al. in view of Takahashi et al. as applied to claims 1, 8-12 and 14 above, and further in view of Sekiguchi.

Ohsako et al. (US 2004/0061935 A1) in combination with Takahashi et al. (US 2005/0078366 A1) teaches the salient features of the present invention, as explained above (see Rejection under §103(a)), except (regarding claims 21-22) an angle correction layer which is formed on the light selective reflection layer on the a side opposite to the substrate, wherein (regarding claim 18) the angle correction layer is processed in the shape of a Fresnel lens. However, Ohsako et al. discloses (regarding claim 13) a layer (12), which allows lights (i.e. incident light) to enter in a direction perpendicular to the surface of the light selective reflection layer (Figure 3) and wherein (regarding claims 19-20) the substrate (11) is black and has a function as a light absorption layer (page 4, paragraph 0054, lines 1-4).

Sekiguchi (US Patent Number 6,707,605 B2) discloses an angle correction layer (50), which is formed on the light selective reflection layer on the side opposite to the substrate (52), wherein the angle correction layer is processed in the shape of a Fresnel lens (column 3, line 46).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the angle correction layer disclosed by Sekiguchi in combination with the light selective reflection layer from Ohsako et al.'s invention, for the purpose of providing a transmission type projection screen which can be easily held and exhibits less conspicuous double image (Sekiguchi, column 2, lines 13-16).

4. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsako et al. in view of Takahashi et al. and Sekiguchi as applied to claims 13 and 18-22 above, and further in view of Sinkoff.

Ohsako et al. (US 2004/0061935 A1) in combination with Sekiguchi (US Patent Number 6,707,605 B2) teaches the salient features of the present invention, except (regarding claim 15) a light selective reflection layer made of solvent materials and (regarding claim 16) wherein the solvent materials comprising the light selective reflection layer is are cured by heating or illuminating ultraviolet. However Ohsako et al. discloses (regarding claim 17) a light selective reflection layer (12) which is an optical multilayer film made by alternately layering high refractive index films and low refractive index films having lower refractive indices than that of the high refractive index films (page 2, paragraph 0034).

Sinkoff (US Patent Number 6,724,529 B2) discloses a light selective reflection layer (50, 60) made of solvent materials (column 5, lines 19-21) and wherein the solvent materials comprising the light selective reflection layer are cured by heating or illuminating ultraviolet (column 5, lines 22-23).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the light selective reflection layer disclosed by Sinkoff in combination with Ohsako et al., Takahashi et al. and Sekiguchi's invention for the purpose of increasing the viewing angle of the reflected image such that the image can be seen from a wide angle relative to a line representing a projected image light ray or wave projected to the screen (Sinkoff, column 4, lines 40-44).

5. Claims 23, 30-34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsako et al. in view of Takahashi et al. as applied to claims 1, 8-12 and 14 above, and further in view of Takada et al.

Ohsako et al. (US 2004/0061935 A1) in combination with Takahashi et al. (US 2005/0078366 A1) teaches the salient features of the present invention, as explained above (see Rejection under §103(a)), except absorption characteristics in relation to lights other than the specific wavelength bands lights on a substrate by using spattering. However, Ohsako et al. discloses the method for manufacturing a projection screen (page 1, paragraph 0002, lines 4-5).

Takada et al. (US Patent Number 4,006,965) discloses that spattering is known as a method for forming a thin layer of metal or alloy on glass material or plastic film, in the manufacture of a projection screen (column 4, lines 52-56 and column 5, lines 4-6).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize spattering to manufacture a screen, as disclosed by Takada et al., in substitution of the method for manufacturing a screen from Ohsako et al.'s invention, with respect to reflectability, cost, chemical stability and the like (Takada et al., column 5, lines 11-12).

6. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsako et al. in view of Takahashi et al. and Takada et al. as applied to claims 23, 30-34 and 36 above, and further in view of Sinkoff.

Ohsako et al. (US 2004/0061935 A1) in combination with Takahashi et al. (US 2005/0078366 A1) and Takada et al. (US Patent Number 4,006,965) teaches the salient



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features of the present invention, as explained above (see Rejection under §103(a)), except (regarding claim 26) an optical multilayer film made by alternately layering metal films, wherein the metal films are made of Nb, Al, or Ag. However, Ohsako et al. discloses (regarding claim 25) an optical multilayer film (12) made by alternately layering films (12H, 12L...) and dielectric films (page 2, paragraph 0034, lines 1-6), wherein (regarding claim 27) the dielectric films are made of Nb<sub>2</sub>O<sub>5</sub>, TiO<sub>2</sub>, Ta<sub>2</sub>O<sub>5</sub>, Al<sub>2</sub>O<sub>3</sub>, or SiO<sub>2</sub> (page 2, paragraph 0034, lines 7-12).

Sinkoff (US Patent Number 6,724,529 B2) discloses an optical multilayer film (30) made by a metal film (20), wherein the metal film is made of Nb, Al, or Ag (column 4, lines 32-34).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the metal film disclosed by Sinkoff in combination with Ohsako et al.'s optical multilayer film, for the purpose of having a projection screen with excellent reflection directivity which produce a reflected image having a superior gain contrast (Sinkoff, page 1, lines 10-12).

7. Claims 35 and 40-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsako et al. in view of Takahashi et al. and Takada et al. as applied to claims 23, 30-34 and 36 above, and further in view of Sekiguchi.

Ohsako et al. (US 2004/0061935 A1) in combination with Takahashi et al. (US 2005/0078366 A1) and Takada et al. (US Patent Number 4,006,965) teaches the salient features of the present invention, as explained above (see Rejection under §103(a)), except (regarding claims 35 and 44) an angle correction layer which is formed on the

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light selective reflection layer on the a side opposite to the substrate, wherein (regarding claim 40) the angle correction layer is processed in the shape of a Fresnel lens.

However, Ohsako et al. discloses (claim 43) a layer (12), which allows lights (i.e. incident light) to enter in a direction perpendicular to the surface of the light selective reflection layer (Figure 3) and wherein (regarding claims 41-42) the substrate (11) is black and has a function as a light absorption layer (page 4, paragraph 0054, lines 1-4).

Sekiguchi (US Patent Number 6,707,605 B2) discloses an angle correction layer (50), which is formed on the light selective reflection layer on the side opposite to the substrate (52), wherein the angle correction layer is processed in the shape of a Fresnel lens (column 3, line 46).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the angle correction layer disclosed by Sekiguchi in combination with the light selective reflection layer from Ohsako et al.'s invention, for the purpose of providing a transmission type projection screen which can be easily held and exhibits less conspicuous double image (Sekiguchi, column 2, lines 13-16).

8. Claims 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsako et al. in view of Takahashi et al., Takada et al. and Sekiguchi as applied to claims 35 and 40-44 above, and further in view of Sinkoff.

Ohsako et al. (US 2004/0061935 A1) in combination with Takahashi et al. (US 2005/0078366 A1), Takada et al. (US Patent Number 4,006,965) and Sekiguchi (US Patent Number 6,707,605 B2) teaches the salient features of the present invention, except (regarding claim 37) a light selective reflection layer made of solvent materials

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and (regarding claim 38) wherein the solvent materials comprising the light selective reflection layer is are cured by heating or illuminating ultraviolet. However Ohsako et al. discloses (regarding claim 39) a light selective reflection layer (12) which is an optical multilayer film made by alternately layering high refractive index films and low refractive index films having lower refractive indices than that of the high refractive index films (page 2, paragraph 0034).

Sinkoff (US Patent Number 6,724,529 B2) discloses a light selective reflection layer (50, 60) made of solvent materials (column 5, lines 19-21) and wherein the solvent materials comprising the light selective reflection layer are cured by heating or illuminating ultraviolet (column 5, lines 22-23).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the light selective reflection layer disclosed by Sinkoff in combination with Ohsako et al., Takahashi et al. and Sekiguchi's invention for the purpose of increasing the viewing angle of the reflected image such that the image can be seen from a wide angle relative to a line representing a projected image light ray or wave projected to the screen (Sinkoff, column 4, lines 40-44).

***Allowable Subject Matter***

9. Claims 6-7 and 28-29 are allowed.

***Response to Arguments***

10. Applicant's arguments filed on 04/11/2005 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magda Cruz whose telephone number is (571) 272-2114. The examiner can normally be reached on Monday through Thursday 8:00-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Magda Cruz  
Patent Examiner  
June 25, 2005



**JUDY NGUYEN**  
**SUPERVISORY PATENT EXAMINER**